REMARKS

In view of the above amendments and following remarks, reconsideration of the rejections contained in the Office Action of January 24, 2006 is respectfully requested.

Rejection Under 35 U.S.C. §112

The Examiner rejected claims 14-17 as failing to comply with the written description requirement. This rejection is respectfully traversed.

The Examiner alleged that the specification failed to adequately describe "the modulated excitation light as non-parallel light-ray beams." It is first noted that Applicants have addressed this issue by removing the corresponding language from independent claim 14. However, Applicants would also like to point out that the language referenced by the Examiner was in any case within the level of skill in the art. Attached please find an appendix including three references and partial translations thereof. These references are JP 8-45084 published February 16, 1996, JP 2000-113476 published April 21, 2000 and JP 2000-260034 published September 22, 2000. Each uses the expression "collimation adjustment" in describing adjustment of a level of non-parallelism of emergent light. It thus a technical point known to those of skill in the art at the time of the present application that the expression "collimation adjustment" does not necessarily mean converting emergent light beams into parallel light beams, but may be an adjustment in a condensing position that may eventually include a positive conversion of the emergent light beam into a non-parallel light beam.

It is further noted that in the present specification, the collimator lens 5 for the probe light is clearly distinguished as an optical element from the beam expander 3 for the excitation light. Please note the original specification at page 7, line 22 to page 8, line 3:

> the beam expander (3) enables collimation adjustment in the directions of A. In addition, the beam expander (3) enables bi-axial centering in the directions of B. On the other hand, as in the case of the excitation light source (1), the probe light that has been output from a probe light source (4) serving as the small-sized laser light

> source is emitted as parallel light-ray beams from a collimator lens (5).

In any case, it is noted that the above has been remedied by the amendments to the claims.

Regarding the Examiner's rejection of the claims as being indefinite, it can thus be seen that the prior language employed was not indefinite. Collimation adjustment is not inconsistent with non-parallel light ray beams. However, again, this has been remedied by the above amendments to the claims as well.

<u>The Claims Clearly Distinguish Over Each of Opsal, Hiraga, Power, Prekel and Morris</u>

As discussed previously, the beam expander 3 enables collimation adjustment in the direction A. The beam expander 3 further enables bi-axial centering in direction B. Note for example Fig. 2. Noting page 8 of the specification, the composite light consisting of the excitation light and the probe light is reflected by the beam splitter 7 to pass through the objective lens 8. The resulting light is radiated onto a specimen chip 9 on the stage. In the interior of the specimen, a thermal lens is formed due to the occurrence of optical to thermal conversion phenomena through the action of part of the excitation light constituting the composite light. The probe light that has passed through the thermal lens is diffused, and together with the excitation light that is not relevant to the optical to thermal conversion, passes through the specimen.

Claim 14 has been amended, in addition to the changes discussed above, to recite the microscope optical system in which the modulated excitation light and the probe light can be passed through the objective lens system and into the stage such that a thermal lens is formed by irradiation of the modulated excitation light into the specimen on the stage. Claim 14 now in particular recites that the beam expander is adjustable in position such that the probe light that has passed through the thermal lens can be diffused so as to be focused on an optical axis of the modulated excitation light around the thermal axis.

Opsal does not disclose that the probe light has passed through the thermal lens can be diffused so as to be focused on an optical axis of the modulated excitation light around the thermal lens by adjusting the position of the beam expander. In particular, it is clear that Opsal does not

disclose an adjustable beam expander at all. Beam expander 26 of Opsal is mentioned at line 24 of column 4 thereof, but there is no further discussion of the beam expander in Opsal.

Rather, in Opsal, noting column 4, lines 52-54, the pump beam 22 that has passed through the beam expander 26 and the probe beam that has passed through the beam expander 64 are focused in a substantially coincident manner on the surface of the sample to maximize a reflectivity signal. It is also noted that Opsal merely refers to the thermal lens effect in explaining the second term of equation 2 in column 6. The object of Opsal is to calculate the thickness of amorphous silicon layer and then evaluate the dosage level by the measurement of three independent reflectivities. It does not describe or suggest a high-resolution desktop thermal lens microscope apparatus as claimed.

By the adoption of the microscope optical system as claimed, integration of an analytic mechanism using the thermal lens effect into a single piece of equipment has been made possible, realizing an ultra-micro analytical microscope that is excellent in portability, spacial resolution and quantitative analytical ability. Such high spacial resolution cannot be achieved with prior optical systems involving color aberration. In the case that ordinary lenses are arranged in an experimental space on a trial and error basis so as to be equivalent to the beam expander 3, the analytical mechanism using the thermal lens effect can neither be integrated into a single piece of equipment nor be made portable.

Hiraga discloses an optical system comprising two laser sources 1, 2, a condenser lens 7, an ND filter 3 and a shutter 4. Excitation light and a probe light are focused at the same position in an optical element 8 as shown in Figs. 1, 3 and 4.

The reference to Eguchi further does not cure the deficiencies of Opsal. Note column 6, lines 14-16, which simply state that "a reference number 21 is an objective lens for converging the light beam, collimated by the collimator lens 26, on the optical disk 22."

Power discloses two beam expanders 6 and 13. However, Power merely discloses a configuration for applying parallel light-ray beams focused at infinity, as shown in Fig. 1 and column 9, lines 16-17 of the patent.

Prekel discloses a chopper 28, but does not include a beam expander. Prekel merely discloses an optical system "such that the position of intersection of said visible locating beam and

the desired measuring point coincide on the work-piece coating surface," as illustrated in Fig. 1 and by claim 1 of the patent.

Morris discloses a lock-in amplifier signal processing and PLL control in a photo thermal deflection detector.

Thus, it is clear that none of the additionally-cited references cure the deficiency of Opsal.

It is noted that all of the aspects for which the various references were cited have not been specifically addressed above. This is in view of the clear distinction over the references. Applicants reserve their rights to specifically address any and all positions made by the Examiner in the Office Action of May 31, 2005 at such time as may become necessary.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance, and the Examiner is requested to pass the case to issue. If the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact Applicants' undersigned representative.

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Respectfully submitted,

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